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(58) Field of Search

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INT CL⁶ F21L 15/00 15/02 15/04, F21M 3/14 3/20
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Online : CLAIMS, WPI**

(54) **Lamp with sliding reflector**

(57) A portable lamp having fluorescent tubes 18 within a transparent housing 16 mounted on a battery casing 20 is provided with a reflector 24 which can be slid from within the housing under its own weight (by inverting the lamp) into a position to reflect all the light to one side only. The reflector is held in this position by magnet 48 engaging recess 50 in the reflector slide mechanism 42, 44, 46. A spring-loaded release pin 56 with a manually operated mechanism 28-38 disengages the magnet.

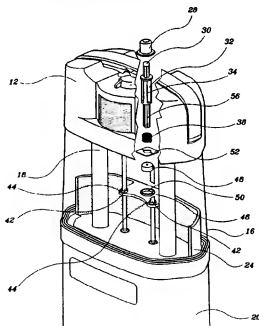
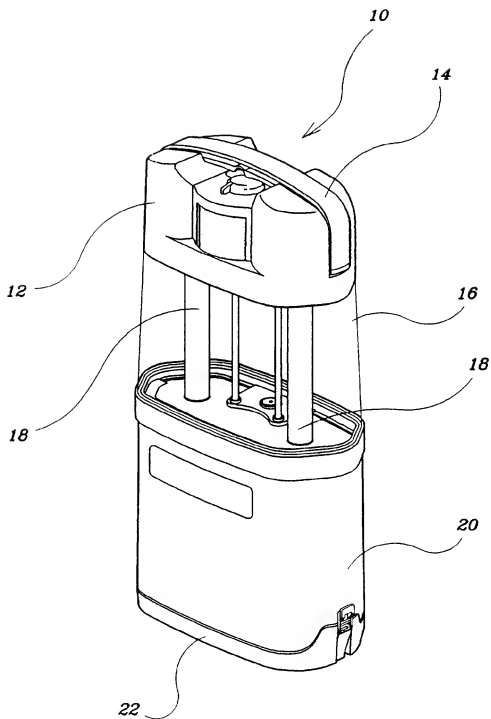
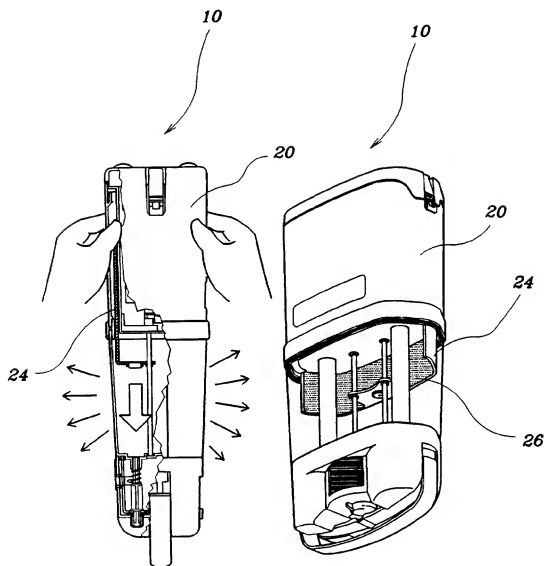
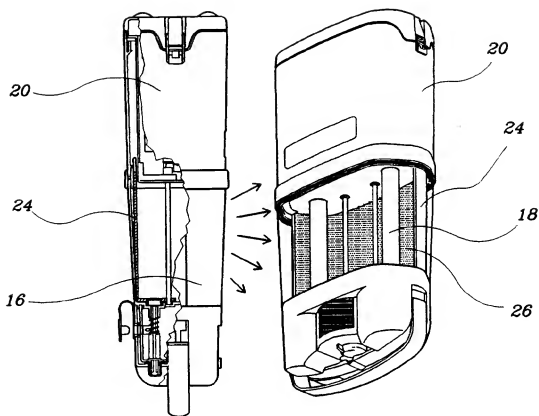


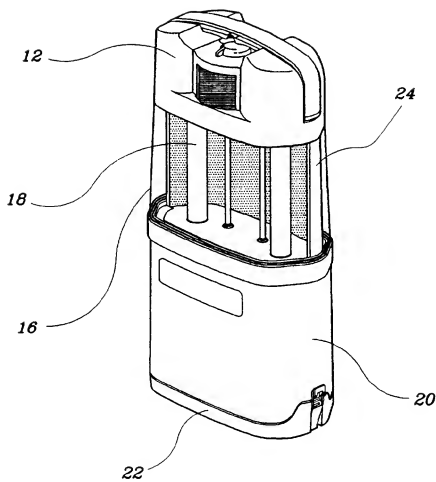
FIG. 5

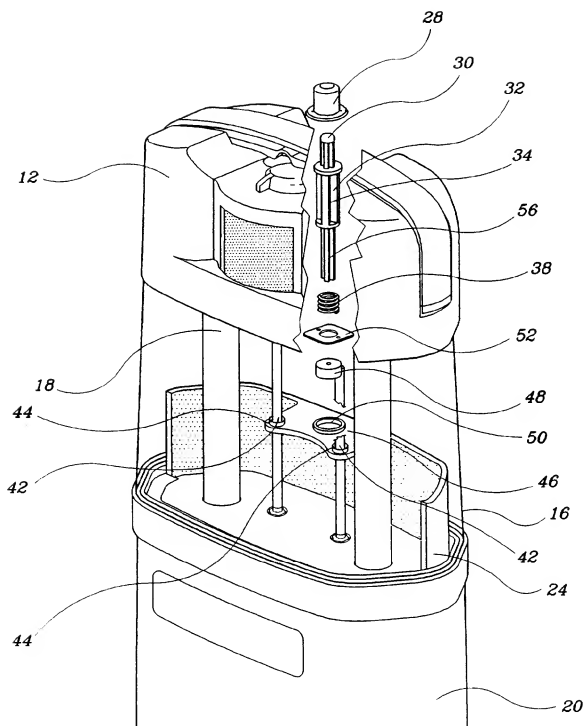
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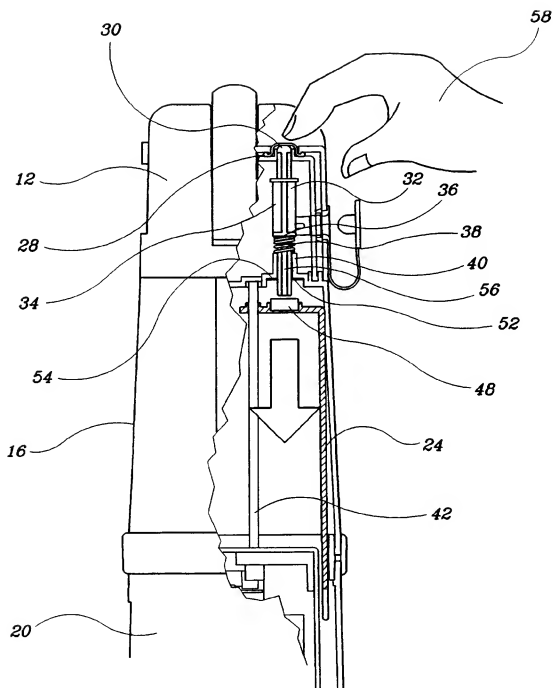
FIG. 1

FIG. 2AFIG. 2B

FIG. 3AFIG. 3B

FIG. 4

FIG. 5

FIG. 6

A Lighting Device

This invention relates to a lighting device and, in particular, an electric lighting device.

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Electric lighting devices are used in many different indoor and outdoor environments. There are times when light is required on all sides, while there are cases wherein light is only required to shine through an angle of, say, 180°. It is thus an object of the present invention to provide an electric lighting device wherein the angle through which the light is allowed to pass through is selectively adjustable. It is, in particular, an object of the present invention to provide an electric lighting device which is easily convertible from one allowing light to pass through on all sides to one allowing light to pass through at an angle of 180°

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According to the present invention, there is provided an electric lighting device comprising a light bulb or tube, a bottom portion, a body portion a first end of which is adjacent to the bottom portion, at least a part of the body portion being non-opaque to allow light from the light bulb or tube to pass through, and a shield member movable between a first position in which it is at least partly received within the bottom portion and a second position to shield at least a part of the non-opaque part of the body portion.

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Conveniently, the shield member may, in its first position, be substantially wholly received within the bottom portion.

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The shield member may suitably be movable under its own weight from the first position to the second position when the bottom portion is positioned higher than the body portion.

- 5 Advantageously, the shield member may, in its second position, be releasably engaged so as to be adapted to move to its first position.

- 10 The shield member, in its second position, may conveniently be releasably engaged with a top portion of the lighting device and the body portion is adjacent at a second end to the top portion.

The shield member may advantageously be releasably engageable with the top portion via magnetic means.

- 15 Suitably, the shield member may comprise a magnet releasable engageable with a ferromagnetic or ferrous magnetic metal part of the top portion.

- 20 Advantageously, the top portion may comprise a release member movable between a stable first position and a second position adapted to disengage the shield member from the top portion.

The release member may suitably be adapted to move to its second position to disengage the magnet of the shield member from the ferromagnetic or ferrous magnetic metal part of the top portion and thereby to allow, when the bottom

portion is positioned lower than the body portion, the shield member to move to its first position under its own weight.

5 Conveniently, the release member may be biased towards its stable first position, e.g. by a spring member.

10 The body portion may advantageously be substantially wholly non-opaque such that, when the shield member is in its first position, the body portion permits light from the light bulb or tube to pass through on all sides.

When the shield member is in its second position, the non-opaque part of the body portion may advantageously be shielded by substantially 180°.

15 The side of the shield member facing the light bulb or tube may suitably be coated or formed with a light-reflective material.

The electric lighting device may conveniently comprise guiding means to guide the movement of the shield member between the first and second positions.

20 Advantageously, the guiding means may comprise at least a substantially vertical bar member in the body portion.

The invention will be described in more detail by way of example only with reference to the accompanying drawings wherein:-

Fig. 1 shows a perspective view of a lighting device according to the present invention;

5 Fig. 2A shows a partial sectional view of the lighting device shown in Fig. 1 held in an inverted position;

Fig. 2B shows a perspective view of the lighting device shown in Fig. 2A;

10 Fig. 3A shows a partial sectional view of the lighting device shown in Fig. 2A with the shield member in a fully exposed position;

Fig. 3B shows a perspective view of the lighting device shown in Fig. 3A;

15 Fig. 4 shows a perspective view of the lighting device shown in Figs. 3A and 3B in an upright position;

Fig. 5 shows a partial exploded view of the upper part of the lighting device shown in Fig. 1; and

20 Fig. 6 shows a partial sectional view of the lighting device shown in Fig. 1.

Fig. 1 shows an electric lighting device according to the present invention designated generally as 10. The lighting device 10 includes a head part 12 with a slidably movable handle 14, and a transparent central part 16 through which light from a pair

of fluorescent tubes 18 may pass. The lighting device 10 also includes a lower part 20, with a pivotably movable cover 22, for housing batteries (not shown).

Turning to Figs. 2A and 2B, the lighting device 10 is shown held in an inverted position. A reflective mirror 24 originally received in the lower part 20 of the lighting device 10 slides downward under its own weight in the direction indicated by the arrow. The reflective mirror 24 has an inwardly-facing light-reflective surface. Figs. 3A and 3B show the reflective mirror 24 in a substantially fully exposed position. It can be seen that about half of the transparent central part 16 is shielded such that light from the fluorescent tubes 18 can only pass through the unshielded side of the transparent central part 16. It can be seen clearly in Fig. 2B that the reflective mirror 24 is curved at its two lateral ends. Such an arrangement allows it to be stored within the lower part 20 behind the batteries.

The reflective mirror 24 may be kept in its substantially wholly exposed position against its own weight, as shown in Fig. 4. As shown in more detail in Figs. 5 and 6, the head part 12 is provided with a button 28 engaging an upper end 30 of a spindle 32. A central broader portion 34 of the spindle 32 has an under-surface 36 acting on a first end of a spring 38. A second end of the spring 38 rests on a shoulder portion 40 of the head part 12 such that the spindle 32 and the button 28 may reciprocate along the central axis of the spindle 32, between a first position in which the spring 38 is in its neutral position and a second position in which the spring 38 is fully compressed.

Running vertically from the head part 12 through the transparent central part 16 to the lower part 20 are two rails 42. The rails 42 are received in two apertures 44 in a platform 46 integrally formed with the reflective mirror 24, such that the rails 42 guide the sliding movement of the reflective mirror 24 from and to the lower part 20.

5 A magnet 48 is received in a recess 50 of the platform 46. A platelet 52 of ferrous magnetic or ferromagnetic metal is attached to an underside 54 of the shoulder 40. The platelet 52 is sized and configured to receive therethrough a lower portion 56 of the spindle 32 such that the lower portion 56 of the spindle 32 may reciprocate through the platelet 52.

10 As shown in Fig. 6, if the button 28 is pushed downward, e.g. by a hand, the spindle 32 will disengage the magnet 48 from the platelet 52 to a sufficient distance such that the reflective mirror 24 will fall back into the lower part 20 in the direction indicated by the arrow, under its own weight.

15 It should be understood that the above illustrates only an embodiment of the present invention and it is possible that such could be varied or modified without departing from the spirit of the invention. For example, the reflective mirror 24 may contain transparent areas of geometric figures, e.g. triangles or circles, for decoration
20 purposes. In addition, the central portion 16 may only be transparent through 180° and the reflective mirror 24 may be adapted to shield the transparent part of the central portion 16 by 90° only.

CLAIMS:-

1. An electric lighting device comprising a light bulb or tube, a bottom portion,
a body portion a first end of which is adjacent to the bottom portion, at least
5 a part of the body portion being non-opaque to allow light from the light bulb
or tube to pass through, and a shield member movable between a first position
in which it is at least partly received within the bottom portion and a second
position to shield at least a part of the non-opaque part of the body portion.
- 10 2. A lighting device according to Claim 1 wherein the shield member is, in its
first position, substantially wholly received within the bottom portion.
3. A lighting device according to Claim 1 wherein the shield member is movable
under its own weight from the first position to the second position when the
15 bottom portion is positioned higher than the body portion.
4. A lighting device according to Claim 1, 2 or 3 wherein the shield member,
in its second position, is releasably engaged so as to be adapted to move to its
first position.
- 20 5. A lighting device according to Claim 4 wherein the shield member, in its
second position, is releasably engaged with a top portion of the lighting device
and the body portion is adjacent at a second end to the top portion.

6. A lighting device according to Claim 5 wherein the shield member is releasably engageable with the top portion via magnetic means.
7. A lighting device according to Claim 6 wherein the shield member comprises a magnet releasable engageable with a ferromagnetic or ferrous magnetic metal part of the top portion.
8. A lighting device according to Claim 5, 6 or 7 wherein the top portion comprises a release member movable between a stable first position and a second position adapted to disengage the shield member from the top portion.
9. A lighting device according to Claim 8 wherein the release member is adapted to move to its second position to disengage the magnet of the shield member from the ferromagnetic or ferrous magnetic metal part of the top portion and thereby to allow, when the bottom portion is positioned lower than the body portion, the shield member to move to its first position under its own weight.
10. A lighting device according to Claim 8 or 9 wherein the release member is biased towards its stable first position.
11. A lighting device according to Claim 10 wherein the release member is biased towards the stable first position by a spring member.
12. A lighting device according to any of the preceding claims wherein the body

portion is substantially wholly non-opaque such that, when the shield member is in its first position, the body portion permits light from the light bulb or tube to pass through on all sides.

- 5 13. A lighting device according to any of the preceding claims wherein, when the shield member is in its second position, the non-opaque part of the body portion is shielded by substantially 180°.
- 10 14. A lighting device according to any of the preceding claims wherein the side of the shield member facing the light bulb or tube is coated or formed with a light-reflective material.
- 15 15. A lighting device according to any of the preceding claims further comprising guiding means to guide the movement of the shield member between the first and second positions.
- 16 16. A lighting device according to Claim 15 wherein the guiding means comprises at least a substantially vertical bar member in the body portion.
- 20 17. A lighting device substantially as herein described and with reference to the accompanying drawings.



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Claims searched: ALL

Examiner: R E Hardy
Date of search: 17 December 1996

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): F4R (RCAA, RCEA, RCK, RE, RFM, RL)

Int Cl (Ed.6): F21L (15/00, 15/02, 15/04); F21M (3/14, 3/20, 7/00); F21Q (3/00);
F21S (17/00); F21V (7/02, 7/12, 7/14, 7/18, 11/18)

Other: Online : WPI, CLAIMS

Documents considered to be relevant:

| Category | Identity of document and relevant passage | Relevant to claims |
|----------|---|---------------------------|
| X | GB2270969 A STRAND : See the Figures | 1,2,15 at least |
| X | GB2021247 A PATENT-TREUHAND : See the Figures | 1,2,14,15 at least |
| X | GB0810256 A SUNBEAM : See the Figures | 1,2 at least |
| X | GB0521613 A MILLER : See the Figures | 1,2 at least |
| X | US5293306 A BAMBER : Whole document | 1,2,4,5,8, 10-15 at least |
| X | US4535390 A CURTIS : Whole document | 1,2,12,14 |
| X | US4074123 A WISSINGER : Whole document | 1-5,12,14-16 at least |

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